

**IN THE CLAIMS:**

Claims 1-4 are pending in the application. Please amend claims 1 and 4, and add new claims 5-12 as follows:

1. (Currently Amended) A biochemical reaction detection apparatus, comprising;  
a first membrane;  
a plurality of islands provided on one side of said first membrane; and  
probe cells for immobilizing probes for detecting biochemical reactions, each of  
said probe cells being provided on a side opposite to said one side of said first membrane  
corresponding to one of the islands though a cross section of the first membrane,  
wherein said islands are spaced from each other with intervals filled with air a  
~~heat-insulating material~~, and each of the islands includes a temperature controller for  
heating and temperature-controlling a corresponding one of said probe cells  
independently.
2. (Original) The biochemical reaction detection apparatus according to claim 1, wherein  
the interval between each of said islands is 50  $\mu\text{m}$  or longer.
3. (Original) The biochemical reaction detection apparatus according to claim 1, wherein  
the interval between each of said islands is 100  $\mu\text{m}$  or longer.
4. (Previously Presented) The biochemical reaction detection apparatus according to claim  
1, wherein said first membrane has a heat conductivity of 10 w/mk (watt/(meter\*kelvin))  
or less.
5. (New) A biochemical reaction detection apparatus, comprising;  
a first membrane;  
a plurality of islands provided on one side of said first membrane; and  
probe cells for immobilizing probes for detecting biochemical reactions, each of said  
probe cells being provided on a side opposite to said one side of said first membrane  
corresponding to one of the islands through a cross section of the first membrane,

wherein said islands are spaced from each other with intervals, and each of the islands includes a temperature controller for heating and temperature-controlling a corresponding one of said probe cells independently.

6. (New) The biochemical reaction detection apparatus according to claim 5, wherein the interval between each of said islands is 50  $\mu\text{m}$  or longer.

7. (New) The biochemical reaction detection apparatus according to claim 5, wherein the interval between each of said islands is 100  $\mu\text{m}$  or longer.

8. (New) The biochemical reaction detection apparatus according to claim 5, wherein said first membrane has a heat conductivity of 10 w/mk(watt/(meter\*kelvin)) or less.

9. (New) The biochemical reaction detection apparatus according to claim 5, wherein said first membrane is made of a material or a composite material selected from a group consisting of silicon nitride, silicon oxide, aluminum oxide and  $\text{Ta}_2\text{O}_5$ .

10. (New) The biochemical reaction detection apparatus according to claim 5, wherein said first membrane is 500  $\mu\text{m}$  thick or thinner.

11. (New) The biochemical reaction detection apparatus according to claim 5, wherein said first membrane is 20  $\mu\text{m}$  thick or thinner.

12. (New) The biochemical reaction detection apparatus according to claim 5, wherein said first membrane is 5  $\mu\text{m}$  thick or thinner.